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## Clinical features and outcome of celiac disease in children

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**Objectives:** To diagnose and study various clinical manifestations of children with Celiac Disease (CD) presenting to a large tertiary care hospital in western Maharashtra and to study the improvement post Gluten Free Diet (GFD).

**Material & Methods:** This is an observational descriptive prospective and retrospective study. CD was diagnosed on the basis of positive tTGA and duodenal biopsy in children with chronic diarrhea, malnutrition and other suggestive features. All diagnosed cases were started on gluten free diet with the help of a nutritionist and followed up for improvement in their clinical, physical, hematological and serological profile post GFD.

**Results:** 50 diagnosed and confirmed patients of CD were included. In a study period of 1 year, we diagnosed 19 new cases that were studied prospectively, whereas 31 patients who were diagnosed within the last 5 years and were on regular follow up were studied retrospectively. In the total group of 50 patients in age range of 1 year to 15 years, 44.0% were males and 56% were females. Mean age of the group was  $5.9 \pm 3.7$  years. Two patients had family history of celiac disease. Mean weight at diagnosis was  $16 \pm 9$  kg. 34% patients were malnourished (weight for age <3rd centile), 12.9% patients were stunted (height for age <3rd centile) and 44% (n=25) had wasting (weight for height <3rd centile). The presenting clinical features of our group of patients were: Chronic diarrhea (92%), failure to thrive (86%), abdominal pain (34%), abdominal distention (26%), anorexia/vomiting (8% or 20%) and weight loss (8%). Rare features were fever, fatigue, blood in stools and constipation. In our study anemia was seen in 76% of patients, 58% of prospective patients had low ferritin levels. Other lab abnormalities were: Elevated liver transaminase (10%), hypoalbuminemia (14%), low ionic calcium (10%), low phosphorus (14%) and high alkaline phosphatase (10%). Stool Cryptosporidium was positive in (14%). Vitamin D levels were low in 84% of prospective patients. tTGA was diagnostic in 80.0% of whole group, mean value being  $131.84 \pm 89.14$  U/ml and median was 141.50. All 50 patients had duodenal biopsies with Marsh grading of histological features. Marsh Type 3a (40%) and 3b (36%) were the commonest categories observed. GFD was started in all patients following diagnosis. 92% patients were found to be compliant to GFD. Median tTGA value declined from median 141.5U/ml at diagnosis to 11.27 U/ml six months post GFD. Average weight at 6-months post GFD was significantly higher (16.5kg vs. 13.5 kg). Weight for age centile, height for age and BMI significantly improved at 6-months post GFD (all with p value<0.001). In our study significant improvement in clinical features and overall health status was found in those who strictly adhered to GFD as compared to those who did not.

**Conclusion:** Our study shows that CD is not rare in Western Maharashtra. High index of suspicion is required for diagnosing celiac disease because of its varied clinical profile. Gluten free diet remains most effective treatment. Strict adherence to gluten free diet leads to resolution of symptoms and improvement in overall health status.

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